

CHAPTER 7

Ground Maintenance Company

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ORGANIZATION AND MISSION

The ground maintenance company is a critical component in fixing the force. To counter a potential numerical superiority in fielded weapon systems, the aviation brigade must make the most of each system it has. The GMC provides unit maintenance for all ASB non-air items and direct support maintenance for AB/ASB non-air items, including automotive,

engineer, utility, power generation, C-E equipment, and small arms. Figure 7-1 shows the company organization, consisting of a company headquarters, a battalion maintenance platoon, a DS maintenance platoon, and a supply platoon. The CSST is structured to support the AB cavalry squadron. This team normally works in a maneuver BSA.

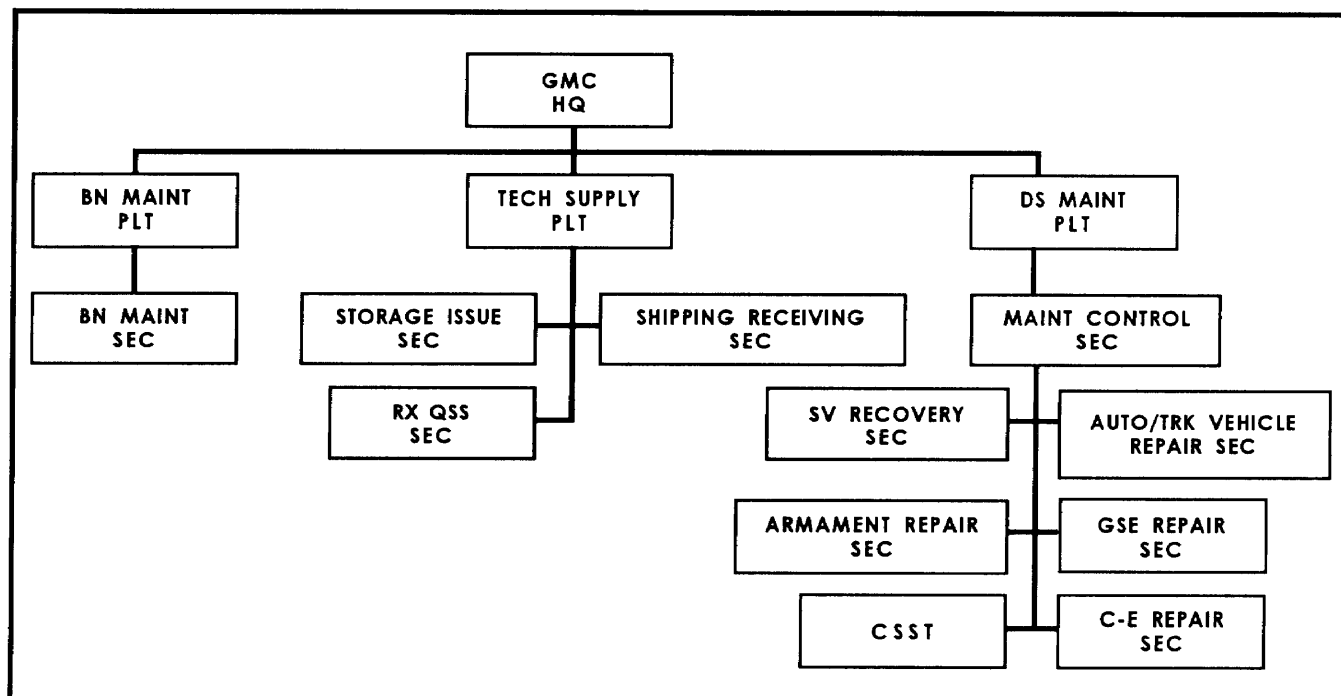


Figure 7-1. Organization of ground maintenance company

The ground maintenance company—

- Performs DS maintenance for the AB and supported elements, including repair of small arms and of communications, engineer, power generation, automotive, and utility equipment.
- Operates a collocated ASL for ground and air Class IX to support the AB prescribed load lists (PLLs). Though collocated, air and ground ASL stocks will not be intermingled.

- Performs consolidated unit maintenance for all ASB units.
- Provides technical assistance to supported unit maintenance operations within the brigade.
- Provides limited recovery assistance to supported units.
- Provides reparable exchange (RX) and quick supply store (QSS) for selected common hardware and low-cost repair parts.

PRINCIPLES

FORWARD SUPPORT

The ASB ground maintenance company's mission is to provide support as far forward as possible to return combat systems to the battle rapidly. Repairing equipment forward saves transportation assets and time. Whenever practicable, equipment repair should be done on site. The tactical situation, extent of damage, and availability of resources may require recovery or evacuation.

are on hand and the required time exceeds the specified limit, the GMC should consider recovery or evacuation. Time lines are set by SOP or by the ASB or AB commander. They are only guidelines. If they are not effective, commanders adjust them to accomplish the mission.

REPAIR TIME LINES

Units decide whether to repair or to recover inoperable equipment to a maintenance site. Established time lines serve as tools to help make this decision. Sample time lines appear in Table 7-1. If all resources

Table 7-1. Maintenance time lines

LOCATION	HOURS
On site	2
BSA	24
DSA	36

CENTRALIZED CONTROL

The GMC commander and the maintenance control officer control all maintenance operations even though support assets are decentralized. They must be aware of the total maintenance work load and of the available assets and their locations. The maintenance control officer manages resources to maximize combat effectiveness and to minimize equipment failure and down time.

BATTLE DAMAGE ASSESSMENT AND REPAIR

BDAR techniques expedite the return of damaged equipment to the current battle. Battle

damage assessment determines the extent of damage to equipment. Repairers classify damaged equipment by the extent of repair required, available resources, and each item's priority. Priorities for repair of battle-damaged items are usually those—

- Most essential to the immediate mission.
- Reparable in the least time.
- Reparable but not in time for the immediate mission.

Battle damage repair (BDR) involves use of emergency repair techniques to enable combat

systems to move, to shoot, and to communicate. Commanders normally direct use of BDR only in combat. BDR includes—

- Taking shortcuts in parts removal or installation.
- Modifying components from other items.
- Using parts from a noncritical function elsewhere on an item to restore a critical function.
- Bypassing noncritical components to restore basic function capability.
- Cannibalizing vehicles or aircraft.
- Making parts from kits or available materials.
- Using substitute fuels, fluids, or lubricants.

Weapons and fuel systems are primary candidates for BDR in combat. When the mission is over, repairers use standard maintenance procedures. Leaks and seepage are repaired to prevent further environmental damage.

CONTROLLED EXCHANGE

Controlled exchange is the removal of serviceable parts from unserviceable, economically repairable equipment and using them to return a similar piece of equipment to full readiness. Controlled exchange must be authorized by the commander of the unit that owns the equipment. The goal is to restore a system to mission-capable status.

CANNIBALIZATION

Cannibalization is the authorized removal of serviceable components from material designated for disposal. During combat cannibalization may be a valuable source of critical repair parts. The

designated commander controls cannibalization operations.

RECOVERY AND EVACUATION

Recovery is retrieving or freeing immobile, inoperative, or abandoned materiel. It is then returned to operation or to a maintenance site for repair, evacuation, or disposal. Recovery is a unit responsibility. Whenever possible, units should use self-recovery and like-vehicle recovery. Wreckers can recover wheeled vehicles and light tracked vehicles. When recovery requirements exceed a unit's capability, the GMC maintenance control officer provides assistance. The unit commander may have to designate priorities for recovery if recovery demands exceed capability. Usually, key weapons systems and fuel transport vehicles are recovered before other vehicles.

Evacuation is moving an item from a collection point to a higher-level logistics activity for repair, cannibalization, or disposal. Evacuation is a support unit responsibility that requires a coordinated effort between maintenance and transportation elements. HETs for heavy equipment evacuation (and other missions) locate in the MSB for centralized control. Whenever possible, the CSST locates maintenance collection points close to MSRS to allow HETs to pick up unserviceable equipment. With assistance from supported units, the GMC identifies equipment for evacuation, including unserviceable items beyond the AB/ASB's repair capability, unserviceable assemblies, and abandoned items. Refer to FMs 9-43-2 and 43-5 for detailed coverage of recovery and evacuation principles.

COMPANY FUNCTIONS

COMPANY HEADQUARTERS

The company headquarters provides C2 to accomplish the company's mission. It provides unit-level operational, administrative, and supply support to elements of the company. Unit maintenance

is detailed in FM 43-5. FM 10-63-1 covers unit mortuary affairs (MA) responsibilities; Chapters 3 and 4 cover C3 considerations for the headquarters.

BATTALION MAINTENANCE PLATOON

Platoon Headquarters

The platoon headquarters provides C2 to accomplish the platoon's mission. It provides unit-level administrative, supply, and technical maintenance support to elements of the platoon.

Battalion Maintenance Section

The section conducts consolidated unit-level maintenance for ASB units, including scheduled services, troubleshooting, and unscheduled repairs, quality assurance, organic recovery, TAMMS, and repair parts supply. The section personnel also serve as the nucleus for BDAR teams. These teams make on-site determinations on repair and evacuation. ULLS-G supports maintenance management in this section.

TECHNICAL SUPPLY PLATOON

Platoon Headquarters

The platoon headquarters directs, supervises, and controls platoon functions in support of the ASB's DS Class IX supply mission. SARSS-O for Class IX is located in this platoon.

The platoon manages the requisition, receipt, storage, issue, and stock control for both common and aviation repair parts. The platoon consists of a headquarters, a shipping and receiving section, a storage and issue section, and an RX/QSS section.

Shipping/Receiving Section

This section receives and accounts for all Class IX repair parts coming from supply sources, field returns, and shipment redirects. It also packages and crates supplies when required.

Storage/Issue Section

This section stores supplies and performs warehouse storage operations such as shelf-life monitoring, protection from weather, and security against

pilferage. It assigns storage locations, maintains stock location systems, and administers document control procedures. It is also responsible for selecting materiel for issue or shipment and for preparing materiel release orders.

RX/QSS Section

The RX/QSS section provides exchange of selected repairable items to supported units and receives, stores, and issues QSS items. The section may maintain a quick supply store for customers to get low-cost, high-demand, consumable parts (light bulbs, wiper blades, common bolts) without formal requests. QSS service improves availability of low-cost, consumable items. RX of selected repairable is handled as a simple exchange of an unserviceable for a serviceable item. Unserviceable repairable must accompany any requests for repairable.

DIRECT SUPPORT MAINTENANCE PLATOON

Maintenance Control Section

The maintenance control officer is the primary manager of DS maintenance. He provides control, coordination, and overall supervision of the maintenance shops, the CSST, and MSTs.

The section controls work flow and equipment accountability. The section includes an inspection section responsible for technical inspections and quality control of all DS maintenance functions. The inspectors also serve on the BDAR teams. SAMS-1 supports maintenance management in this section.

In addition to the maintenance control section, the platoon consists of six sections—automotive/track vehicle repair, service and recovery, ground support equipment repair, armament

repair, communications/electronics repair, and the cavalry system support team.

Platoon Headquarters

The platoon headquarters provides administrative control for personnel of the six sections in support of the GMC's DS maintenance mission.

Automotive/Tracked Vehicle Repair Section

The section performs base shop and on-site DS maintenance. It repairs transmissions, engines, electronics items, hydraulics, and steering controls on tracked vehicles. It also works on the engines, power trains, and chassis components of wheeled vehicles.

Service and Recovery Section

This section provides welding services, metal body repair, heavy-lift capability for shop operations, and machine working. The section is also responsible for recovery of organic equipment and has limited evacuation capability.

Ground Support Equipment Repair Section

The GSE repair section performs base shop and on-site DS maintenance on power generators, construction equipment, air conditioner units, refrigeration equipment, heaters, utility packs, water purification units, and NBC equipment.

Armament Repair Section

The armament repair section performs base shop and on-site maintenance on—

- Tank turret—turret, cupola, loading, firing, and recoil mechanisms.

- Fire control system—laser range finders, electronic ballistic computers, tank thermal sights.
- Fire control instruments—binoculars, telescopes, aiming circles, range finders.
- Small arms—rifles, mortars, pistols, machine guns.

Communications-Electronics Repair Section

This section performs base shop and on-site maintenance on—

- Radio receivers, transmitters, and associated equipment.
- Computer terminals and facsimile equipment.
- Manual/semiautomatic and some transportable automatic electronic telephone central office equipment.
- Night vision equipment.
- Certain electronic fire control and alignment devices.

The bulk of the section normally works out of the base shop. However, the maintenance control officer may tailor the MSTS for specific missions using any of his assets.

Cavalry System Support Team

This team provides direct support maintenance to the aviation brigade's cavalry squadron. The team normally operates out of the cavalry squadron trains area. It is reinforced with other DISCOM elements as required. The team's repair capabilities include: automotive/tracked vehicles, armament/fire control systems, ground support equipment, and communications-electronics.

OPERATIONS

PLANNING

Maintenance planning in the ASB anticipates resource requirements and applies them IAW command priorities. The goal is to return the maximum number of critical items to the battle while consuming the fewest resources. Planners must recognize limitations in armor protection, mobility, and communications that influence the GMC's capabilities. Planning considerations include the—

- Tactical situation.
- Time and distance factors.
- Reinforcement support responsibilities.
- Command support priorities.
- Critical weapon systems and repair parts.
- Proposed maintenance collection point (MCP) locations.
- Maintenance time lines.
- Cannibalization and controlled exchange policies.
- Work load across the brigade area.

The maintenance control officer assists the ASB commander and support operations officer in planning support. They must determine which maintenance assets will operate at the ASB's base shop, MCPs, and on-site locations. This determination is a continuing process, not a onetime decision. Task organizing of aviation brigade units requires flexible asset management.

BASE SHOP OPERATIONS

The base shop area in the division rear consists of GMC elements not employed at MCPs or AB battalion field trains. The shops are responsible for receipt, inspection, control, repair, and coordinating the evacuation of equipment received from supported units.

The shop layout must allow free flow of work and minimize the required movement of repair parts, tools, and equipment. In addition to the considerations listed in Chapter 5, the company

commander should try to lay out the shops so that the—

- Supply storage areas are accessible to trucks.
- Service section is accessible to all shop locations.
- Electronics and instrument repair can be done in a dust-free area.
- Vehicles may disperse near maintenance areas but locate to facilitate control and security.
- Control and inspection elements are near the area entrance.
- Supply storage and RX areas are near the entrance to keep traffic out of the work area.

The same principles apply to shops in a built-up area. For example, control, inspection, and supply activities should be near the entrance to the shop area, and elements with related or complementary functions should be near each other. Where buildings are sound and road systems adequate, it is preferable to use them as they may provide better work areas and concealment.

The GMC internal SOP outlines shop procedures, which should follow guidance in DA Pam 738-750. An external SOP for use by supported units should also follow those guidelines.

Management activities vary depending on the system available in the division. TAMMS is described in DA Pam 738-750. SAMS-1 automates DS maintenance management within the GMC. It also provides a daily interface with SARSS-O and SAMS-2.

MAINTENANCE COLLECTION POINTS

MCPs operated by the GMC receive unserviceable equipment from supported units. The company can operate two MCPs, one of which is at the base shop. A forward-moving tactical situation may require another point in the BSA to reduce recovery distances. At the MCPs, GMC personnel perform

large-scale BDAR, using controlled exchange and cannibalization to maximize operational systems. Any contaminated equipment is segregated at the MCP. If a supported unit cannot recover equipment to an MCP, it should recover the items as close as possible to an MSR to await maintenance support. The unit must provide or arrange for security for the equipment. The unit must also provide accurate location information to the maintenance control station (MCS).

Units finding abandoned US equipment turn it in to the MCP. There, maintenance personnel inspect and classify it. The DMMC provides disposition instructions. It may direct that the item be turned in to a supply unit or be evacuated to a corps facility.

MAINTENANCE SUPPORT TEAMS

MST operations present the maintenance control officer and MST leader and members with the same challenges faced by any other small unit in a tactical environment. In addition to its technical mission, the team must have the mobility to get to repair sites and to move with the supported unit. The team must be proficient in self-protection techniques during a move. Supported elements must be aware that the MST has limited self-defense assets. Time spent in defense activities increases maintenance time.

For operations other than self-defense, the MCO retains command and control of the teams. Changes in the tactical situation or communications limitations may threaten control. MSTs must prepare to conduct independent operations by SOP when required.

MSTs require adequate communications to assist in security, to report to the MCS, and to request support from the base shop. When the MST's organic radio capability is inadequate, additional support may be available from the supported unit. MSTs also carry a limited supply of repair parts with them. Past experience and work load determine which parts to carry.

The ground maintenance company's internal SOP should describe—

- Organization of teams for recurring situations.
- Command relationships.
- Assignment of work order numbers.
- Hand receipt and repair parts procedures.
- Recovery and evacuation guidelines.
- Spill contingency plan.
- Waste POL storage and disposal.

ON-SITE OPERATIONS

When unit maintenance resources (mobility, security, tools and parts, or communications) are inadequate, MSTs or other maintenance teams may be formed from the GMC to perform on-site repairs. Procedures for requests for such support must be in the external SOP and available to all supported units. Requests should include the following information:

- Identification of unit and equipment.
- Location (grid coordinates).
- Nature and extent of damage.
- Repair parts required.
- Security and NBC considerations.
- Recommended route of approach.
- Pickup points for unit guides, if required.
- Required environmental protective measures.

Once the team arrives, the team chief makes a battlefield damage assessment (BDA) and decides whether to repair on site or to recover to an MCP. Maintenance time lines, available resources, and the tactical situation are primary determinants. If on-site repair is feasible, the team repairs the item and returns it to the user. If the item must be recovered, the team considers short tracking or other expedient self-recovery and like-vehicle recovery before committing a recovery vehicle.

REPAIR PARTS SUPPLY

The technical supply operations section of the GMC receives, stores, and issues repair parts. It edits

and fills all requests when parts are available. The section also notifies the DMMC of the issue. If the part is not available, the section passes the requisition to the DMMC. If the item is available in the MSB Class IX section, the DMMC passes an MRO to the MSB, which provides the item to the ASB. If the MSB does not have the item, the DMMC passes a requisition to the COSCOM MMC. The DMMC also specifies Class IX items and quantities to locate in the division rear area. This decision is based on the PLLs of supported units and on the ASB's mobility requirements. To ensure that the ASB remains mobile, the DMMC restricts stockage in the GMC. AR 710-2 lists stockage parameters for direct support units. Whenever possible, critical items are transported by air.

Figure 7-2, shows the flow of Class IX requests and stocks. The aerial resupply discussed in Chapter 6 also applies to Class IX.

MSB Reinforcing Support

The maintenance relationship between the MSB and the ASB is established by the DISCOM commander. Command priorities and the ASB's

capabilities to accomplish specific missions determine the amount of support. The MSB provides timely, tailored reinforcing support for DS maintenance. The ASB support operations section coordinates with the DISCOM S3 when the GMC needs reinforcing support. The MSB light and heavy maintenance companies maintain technical relationships with the GMC.

DMMC Materiel Section

The DMMC provides maintenance management for the ASB as it does for the MSB and the FSBS. The DMMC manages all classes of supply (except VI, VIII, X, and classified maps). It monitors ASLs and specifies the quantities of Class IX material physically maintained by the GMC. It also provides disposition instructions for excess items and for evacuation of items to higher levels of maintenance. The materiel section manages repair parts supply and maintenance. It designs and manages the division Class IX inventory and directs the Class IX issue. Its management is limited to maintenance functions that are generally external to the ASB. The DMMC monitors unit maintenance throughout the division and provides day-to-day assistance on maintenance to the ASB.

VARYING TACTICAL OPERATIONS

OFFENSE

Before an offensive operation, maintenance personnel inspect equipment and perform required maintenance. They eliminate shortages whenever possible and set up reserve stocks. Using METT-T, repairers increase stockage of certain critical items. For example, in many offensive operations MSTs going forward would increase stockage of small, high-usage RX items, such as automotive subassemblies and fire-control instruments.

As the tempo increases and distances lengthen, maintenance support moves forward. Forward deployment must consider MST vulnerability,

possible enemy counterattacks, and maneuver element requirements for space and roads. Maintenance elements may require security assistance if they must bypass pockets of enemy activity. Continuous movement forward may also require the commander to adjust maintenance time lines. As lines continue to lengthen, expedient maintenance techniques may be required:

- Establishing procedures to allow MSTs to draw from the FSB's ASL.
- Increasing emphasis on cannibalization and controlled exchange.
- Setting up MCPs.

- Increasing emphasis on evacuation, with repair in forward areas limited to component replacement, adjustments, and servicing.
- Using air transportation to move repair personnel and parts.

DEFENSE

- Typically, supported units are not as widespread as in offensive operations. Therefore, the ground maintenance company's assets can usually be more centralized.

In a static defense, movement is less frequent; more time is available for maintenance operations. Commanders may increase time lines for repair and may build up reserves of critical items consistent with mobility requirements and capabilities.

A dynamic defense has many of the same maintenance implications as an offensive operation. For instance, maintenance sites need to move frequently and vehicle maintenance requirements increase.

RETROGRADE

Ground maintenance company assets begin to move to the rear before combat elements. Movement is by echelon with maintenance elements leapfrogging each other to maintain continuous support. Maintenance operations concentrate on weapon systems and other items required to support the retrograde. Other equipment is evacuated to future planned support areas before opposing forces can overtake it. The commander determines priority of support.

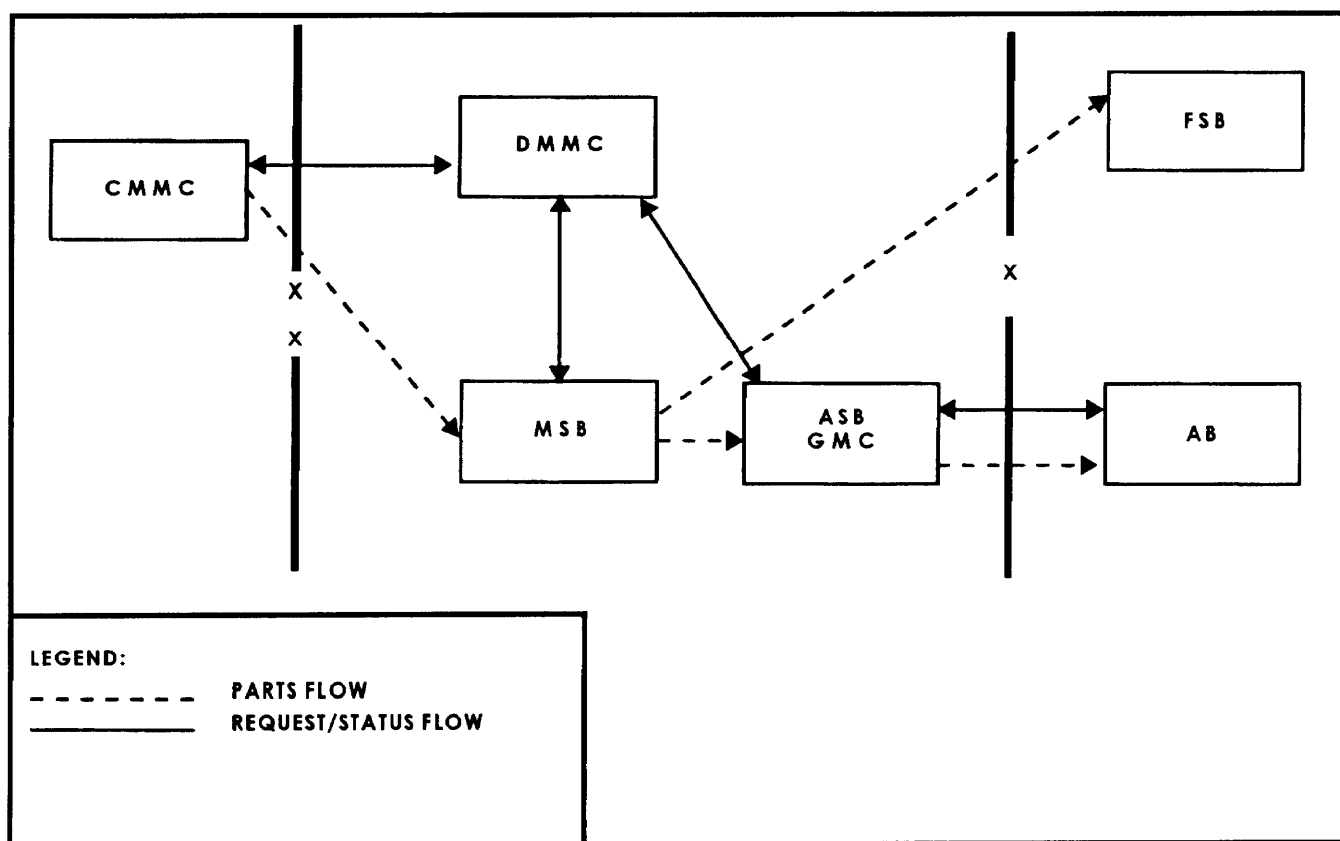


Figure 7-2. Flow of Class IX requests, status, and stock